



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,871	10/11/2001	Fred A. Bunn	1875.0640001	7047
26111	7590	03/02/2005	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			LIN, KENNY S	
			ART UNIT	PAPER NUMBER
			2154	

DATE MAILED: 03/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 09/973,871	Applicant(s) BUNN ET AL.	
	Examiner Kenny Lin	Art Unit 2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>all 4</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Claims 1-24 are presented for examination.
2. The IDS have been considered by the examiner.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-24 are rejected under 35 U.S.C. 102(a) as being anticipated by Birdwell et al (hereinafter Birdwell), US 6,032,197.
5. Birdwell was cited by the applicant in IDS submitted on July 3, 2002.
6. As per claims 1 and 13, Birdwell taught the invention as claimed including a method/control logic for optimizing the transmission of TCP/IP traffic across a DOCSIS network, comprising the steps of:
  - a. Transmitting fields in a protocol header of a first TCP protocol packet (col.1, lines 26-58, col.2, lines 19-36, col.4, lines 42-50, fig.4);

Art Unit: 2154

- b. Suppressing redundant fields in protocol headers of subsequent TCP protocol packets (col.1, lines 26-58, col.2, lines 19-32, 48-56, col.4, lines 19-26, 42-50, col.5, lines 11-52); and
- c. Transmitting a delta-encoded value for each non-redundant field in said protocol headers of subsequent TCP protocol packets, wherein said delta-encoded values represents a change in value from said non-redundant field in said protocol header of a previous TCP protocol packet (col.1, lines 26-58, col.2, lines 19-32, 48-56, col.6, lines 1-9).

7. As per claims 2 and 14, Birdwell taught the invention as claimed in claims 1 and 13. Birdwell further taught that step a) further comprises the step of transmitting said first TCP protocol packet with an indicator, wherein said indicator indicates that said first TCP protocol packet is to be learned (col.2, lines 48-67, col.3, lines 1-27, col.5, lines 53-67, col.6, lines 1-20; e.g. flag).

8. As per claims 3 and 15, Birdwell taught the invention as claimed in claims 1 and 13. Birdwell further taught that step a) further comprises the step of transmitting said first TCP protocol packet in its entirety and transmitting subsequent protocol headers in a compressed format (col.4, lines 21-25, col.5, lines 11-67, col.6, lines 1-9, 52-54).

9. As per claims 4 and 16, Birdwell taught the invention as claimed in claims 1 and 13. Birdwell further taught that said subsequent TCP protocol packets begin with a bitmapped

Art Unit: 2154

change byte, wherein bits in said bitmapped change byte indicate which of said non-redundant fields in said protocol header has said delta encoded value (col.6, lines 1-20, col.7, lines 24-33).

10. As per claims 5 and 17, Birdwell taught the invention as claimed in claims 4 and 16.

Birdwell further taught to comprise the steps of:

- a. Enabling a receiver to learn said first TCP protocol packet (col.1, lines 26-58, col.2, lines 19-36, 48-67, col.3, lines 1-27, col.4, lines 42-50, fig.4);
- b. Enabling a receiver to restore said suppressed redundant fields in said protocol headers of subsequent TCP protocol packets using said first TCP protocol packet (col.1, lines 26-58, col.2, lines 19-32, 48-56, col.4, lines 19-26, 42-50, col.5, lines 11-52, col.6, lines 21-31);
- c. Enabling a receiver to restore said non-redundant fields in said protocol headers of subsequent TCP protocol packets using said delta-encoded values (col.1, lines 26-58, col.2, lines 19-32, 48-56, col.4, lines 19-26, 42-50, col.5, lines 11-52, col.6, lines 1-20); and
- d. Enabling a receiver to place said restored header in front of any received data for transmission over an Internet Protocol network (col.1, lines 26-58, col.4, lines 34-67 and col.5, lines 1-19, col.8, lines 15-29; fig. 7).

11. As per claims 6 and 18, Birdwell taught the invention as claimed in claims 5 and 17.

Birdwell further taught to comprise the steps of:

Art Unit: 2154

- a. Enabling a receiver to read said bitmapped change byte (col.5, lines 66-67, col.6, lines 1-20, col.7, lines 24-33);
- b. Enabling a receiver to retrieve said delta encoded values using said bitmapped change byte (col.5, lines 66-67, col.6, lines 1-20, col.7, lines 24-33);
- c. Enabling a receiver to update said non-recurring fields in said protocol header using said delta-encoded values (col.7, lines 38-52, col.8, lines 30-44); and
- d. Enabling a receiver to restore said protocol header to its original format (col.7, lines 15-19, 38-52, 54-67, col.8, lines 1-29).

12. As per claims 7 and 19, Birdwell taught the invention as claimed in claims 1 and 13.

Birdwell further taught to comprise the step of placing said restored protocol header in front of any received data for transmission over an Internet Protocol network (col.1, lines 26-58, col.4, lines 34-67 and col.5, lines 1-19, col.8, lines 15-29; fig.7).

13. As per claims 8 and 20, Birdwell taught the invention as claimed including a method/control logic for sending packets over a TCP/IP transmission medium, comprising the steps of:

- a. Receiving fields in a protocol header of a first TCP protocol packet (col.1, lines 26-58, col.2, lines 19-36, col.4, lines 42-50, fig.4);
- b. Receiving suppressed fields in said protocol headers of subsequent TCP protocol packets (col.1, lines 26-58, col.2, lines 19-32, 48-56, col.4, lines 19-26, 42-50, col.5, lines 11-52); and

Art Unit: 2154

- c. Receiving a delta-encoded values for each non-redundant field in said protocol headers of subsequent TCP protocol packets, wherein said delta-encoded value represents a change in value from said non-redundant field in said protocol header of a previous TCP protocol packet (col.1, lines 26-58, col.2, lines 19-32, 48-56, col.6, lines 1-9).

14. As per claims 9 and 21, Birdwell taught the invention as claimed in claims 8 and 20. Birdwell further taught that step a) further comprises the step of receiving an indicator with said first TCP protocol packet, wherein said indicator indicates that said first TCP protocol packet is to be learned (col.2, lines 48-67, col.3, lines 1-27, col.5, lines 53-67, col.6, lines 1-20; e.g. flag).

15. As per claims 10 and 22, Birdwell taught the invention as claimed in claims 8 and 20. Birdwell further taught that said subsequent TCP protocol packets include a bitmapped change byte, wherein bits in said bitmapped change byte indicate which of said non-redundant fields in said protocol header has said delta encoded values (col.6, lines 1-20, col.7, lines 24-33).

16. As per claims 11 and 23, Birdwell taught the invention as claimed in claims 8 and 20. Birdwell further taught to comprise the steps of:

- a. Learning said first TCP protocol packet (col.1, lines 26-58, col.2, lines 19-36, 48-67, col.3, lines 1-27, col.4, lines 42-50, fig.4);
- b. Using learned information from said first TCP protocol packet to reconstruct said suppressed fields in said protocol header of a current TCP protocol packet (col.1,

Art Unit: 2154

lines 26-58, col.2, lines 19-32, 48-56, col.4, lines 19-26, 42-50, col.5, lines 11-52, col.6, lines 1-31); and

- c. Using the subsequent TCP protocol packet to reconstruct said non-redundant fields in said protocol header of said present TCP protocol packet (col.1, lines 26-58, col.2, lines 19-32, 48-56, col.4, lines 19-26, 34-67 and col.5, lines 1-52, col.8, lines 15-29; fig. 7).

17. As per claims 12 and 24, Birdwell taught the invention as claimed in claims 11 and 23. Birdwell further taught to comprise the step of restoring said present TCP protocol packet to its original format and transmitting said present TCP protocol packet over an Internet Protocol network (col.1, lines 26-58, col.4, lines 34-67 and col.5, lines 1-19, col.8, lines 15-29; fig.7).

### *Conclusion*

18. A shortened statutory period for reply to this Office action is set to expire THREE MONTHS from the mailing date of this action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenny Lin whose telephone number is (571) 272-3968. The examiner can normally be reached on 8 AM to 5 PM Tue.-Fri. and every other Monday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 2154

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ksl  
February 17, 2005

 **JOHN FOLLANSBEE**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2100**